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(19) (CA) **APPLICATION FOR CANADIAN PATENT** (12)

(54) Cutting Apparatus for Venetian Blind

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(57) 11 Claims

*Fig 1, 2
pointed blade 6*

Notice: This application is as filed and may therefore contain an incomplete specification.



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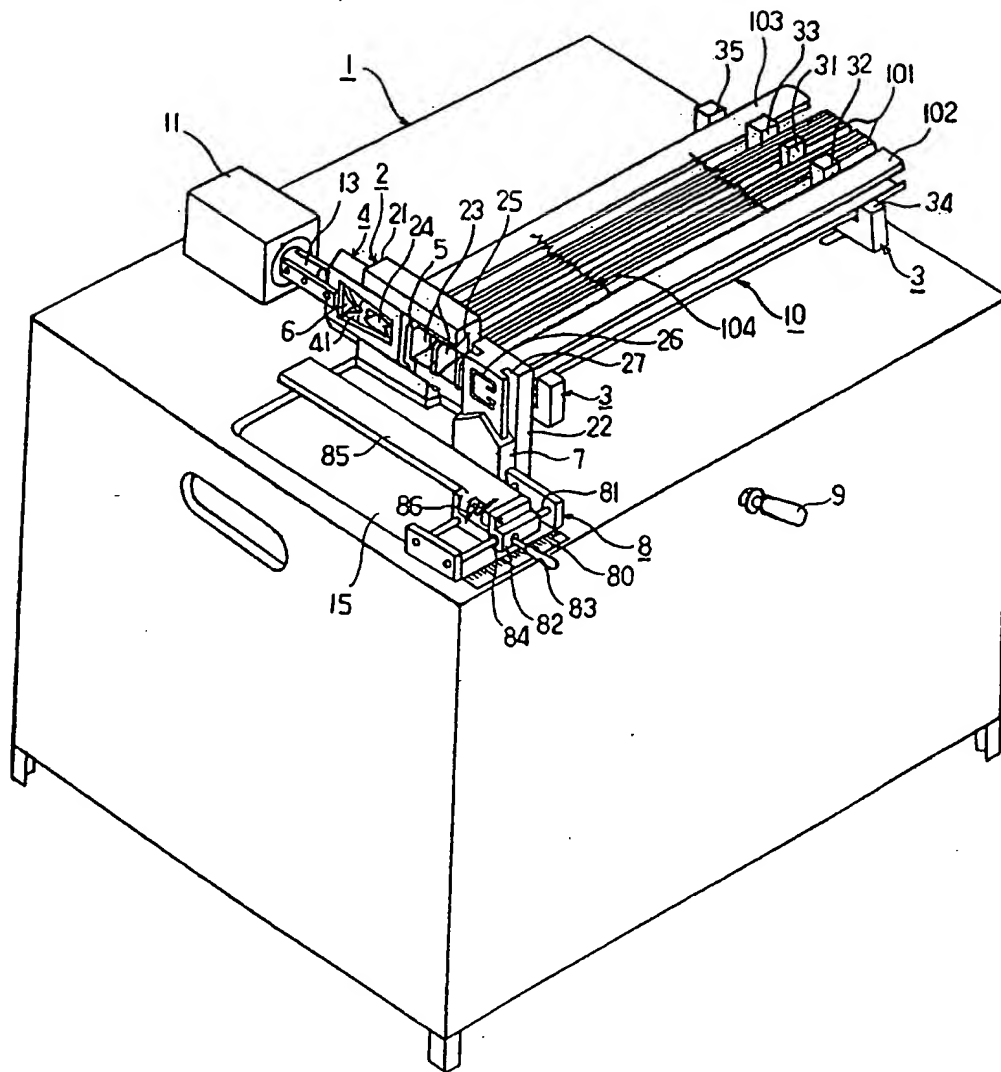


FIG. 1

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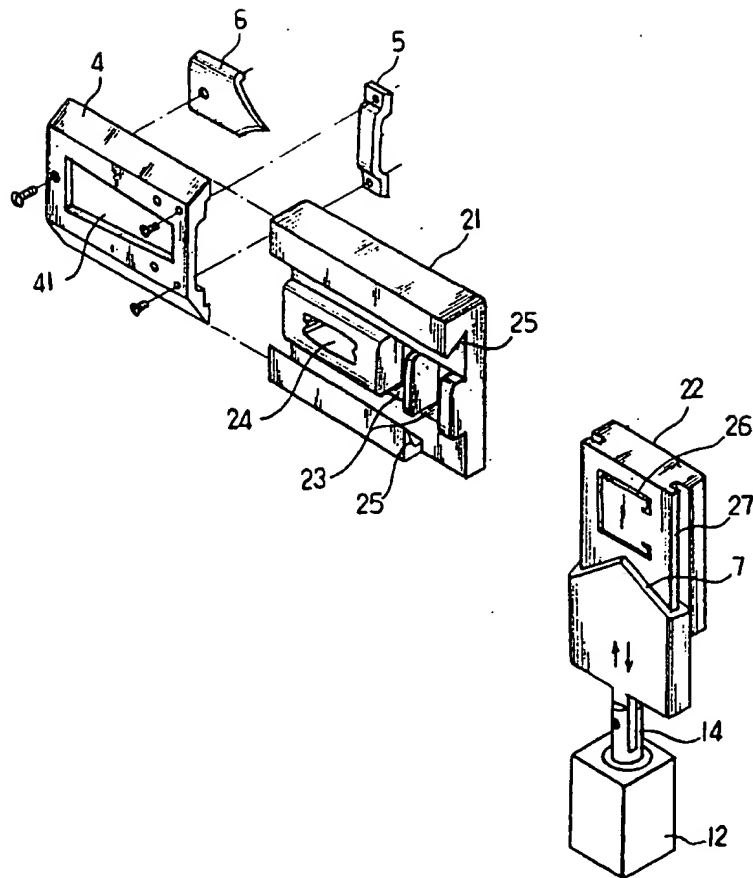


FIG. 2

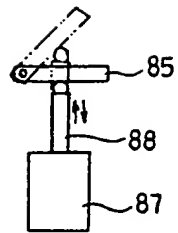


FIG. 3

Cutting Apparatus for Venetian BlindField of the Invention

This invention relates to a novel cutting apparatus for
5 venetian blind, particularly to the cutting apparatus that can cut
the entire venetian blind comprising the bottom rail, a plurality of
slats and the head rail by one operation at the same time into a
predetermined length in neat appearance.

10 Background of the Invention

Normally, a venetian blind consists of the bottom rail, a
plurality of slats and the head rail, which are manufactured in the
factory according to the standard dimensions of the width and the
length. In installation, the length of each slat should be cut to
15 fit the size of a window.

U.S. patent No. 4,876,795, assigned to the same assignee,
disclosed a cutter for a slat of the venetian blind. This cutter
can cut a multitude of slats one by one for a venetian blind though,
it takes a lot of time to finish the work. And regretfully, this
20 kind of cutter is unable to cut off the relatively rigid bottom and
head rails.

Summary of the Invention

The primary object of the present invention is to provide a
25 cutting apparatus for entire venetian blind, which comprises
essentially a set of blades for cutting the bottom rail, a plurality
of slats and the head rail of a venetian blind, respectively, a pair
of identical comb like supports with at least three intermediate
vertical teeth to separate said bottom rail, said slats and said
30 head rail from each other, and locating means to limit the length of
the venetian blind to be cut off.

The aforementioned and other objects, features and advantages
will be apparent and better understood from the description set
forth below with reference to the accompanying drawings.

Brief Description of the Accompanying Drawings

Fig. 1 is a perspective view of the present cutter;

Fig. 2 is an exploded perspective view illustrating the set of three blades with respective holder; and

5 Fig. 3 is a schematic view to illustrate the inclined action of the locating means.

Detailed Description of the Preferred Embodiments

Now, reference is made to the drawings. The cutting apparatus
10 according to the present invention comprises a frame 1 disposed with a blade set 2 and a pair of opposite supports 3.

The blade set 2 consists of a common blade holder 21 for the bottom rail and slats and a head rail blade holder 22. Said common blade holder 21 is provided with slat opening 23 and bottom rail
15 opening 24 at central portion, as well as longitudinally opposite slant guide grooves 25 at upper and lower sides, respectively. A slide 4 having a window 41 at central portion is at longitudinally opposite slant edges slidably retained into said guide grooves 25. At fore end of said window 41 is mounted with a deflected blade 5
20 while at aft end of said window 41 a pointed blade 6, the latter is exposed in the area of said window 41. Both end sides of said deflected blade 5 are rounded to form a smooth curvature and may be sharpened at the cutting edge.

The head rail blade holder 22 is formed with head rail opening
25 26 in a shape corresponding to the cross section of a head rail used in a venetian blind, and opposite guide tracks 27 at both lateral sides to have the head rail pointed blade 7 riding thereon. Said slide 4 and said blade 7 are connected to and driven synchronously by the shafts 13, 14 of the cylinders 11, 12, respectively.

30 The pair of supports 3 is mounted on said frame 1 in parallel with said blade set 2 and spaced apart to each other in such that one of said supports 3 is positioned close to said blade set 2 and another is remote therefrom. Each of the support 3 is in comb like and has three intermediate teeth 31, 32 and 33 in addition to both terminal
35 stop means 34 and 35. The locations of said supports 3 is adjustable and optionally more than two of said supports 3 can be formed.

At another side of said blade set 2 opposite to said supports 3 is installed with a locating means 8 which comprises two guide rods 81 in connection with a slide 82. A handle 83 is engaged with an eccentric pipe 84 (not shown in detail) inside of said slide 82 for the purpose to displace and adjust the location of said slide 82 in a known manner. A locating damper 85 is extended from said slide 82 and provided with a torsion spring 86. A piston rod 88 is extended out of the cylinder 87 until against under said damper 85. A scale 80 is marked or attached on said frame 1 beside said locating means 8.

10 A switch 9 is provided at front side of said frame 1.

In operation, the locating means 8 is at first adjusted to the location that equal to the length of the venetian blind to be cut off for suitable use in designated size of a window. Then, an assembled entire venetian blind 10 is placed over the supports 3, in such way that the head rail 102 is defined between one of the terminal stop means 34 and the first tooth 32, while the bottom rail 103 is similarly defined between another terminal stop means 35 and the third tooth 33. And a plurality of slats 101 are defined between said first and third teeth 32 and 33, respectively. The second or

20 central tooth 31 is used as a spacer and inner support to divide the slats 101 into two groups in order to avoid any possible deviation among the slats when more pieces of slats in stack are cut at one time. If necessary, additional central teeth 31 can be provided if even much more pieces of slots are used in a venetian blind 10. All

25 ends of said bottom rail 103, said slats 101 and said head rail 102 to be cut off are passed and extended through the opening 24, 23 and 26, respectively, until limited by said locating damper 85. In this embodiment since the slats 101 are divided by the tooth 31 into two groups so that the slat opening 23 is also divided into two holes

30 by a partition as illustrated.

Next, the switch 9 is turned on to actuate the shafts 13, 14 and, in turn, to advance the slide 4 and the head rail blade 7, respectively. So that said bottom rail blade 6 and said slat blade 5 carried by said slide 4 cut off the extended ends of said bottom

35 rail 103 and said slats 101, at the same time, while said head rail

blade cut off the extended end of said head rail 102. Simultaneously, the shaft 88 reciprocatively drives said locating damper 85, as best seen in Fig.3, inclinedly upwards to cause the cut ends of said bottom and head rails and a plurality of slats dropped by gravity into the opening 15 for collection.

- 5 The cutting apparatus constructed according to the presently preferable embodiments has been described hereinabove as exemplary of the invention. Moreover, it should be noted that number of modifications, variations and changes can be made to the invention without departing from the spirit and scope thereof. Accordingly
- 10 the invention is not intended to restrict in the forgoing embodiments, but is only limited by the scope of the appended claims.

What I claim is:

1. A cutting apparatus for venetian blind comprising a bottom rail, a plurality of slats and a head rail, said apparatus comprises in combination:

5 a set of blades for cutting the predetermined ends of said bottom rail, said slats and said head rail, respectively, by one operation at same time;

a pair of supports to support said venetian blind placed thereon, in comb like identical to each other, having at least three
10 intermediate vertical teeth in addition to both terminal stop means, for separating said bottom rail, said slats and said head rail from each other and defining the same therebetween; and

locating means to limit the length of said venetian blind to be cut off.

15 2. The cutting apparatus of claim 1, wherein said set of blades is so constructed to consist of a common blade holder for said bottom rail and said slats and a head rail blade holder, in which said common blade holder comprises in combination;

a slat opening and a bottom rail opening at central portion
20 thereof, for the ends of said bottom rail and said slats to be cut off passing through;

longitudinally opposite slat guide grooves at upper and lower sides thereof, respectively;

a slide having a window at central portion and
25 longitudinally opposite slat edges at upper and lower sides thereof, respectively, to be slidably retained correspondingly into said guide grooves;

a slat blade mounted at fore end of said window; and

a bottom rail blade mounted at aft end of and exposed in
30 said window; and

said head rail blade holder is formed with a head rail opening in a shape corresponding to the cross section of said head rail, for the end of said head rail to be cut off passing through, opposite guide tracks at both lateral sides, and a head rail blade
35 riding thereon.

3. The cutting apparatus of claim 1, wherein when said venetian blend is placed over said supports, said head rail is defined between one of said stop means of said support and first tooth , while said bottom rail is defined between another said stop means
5 and third tooth, and said plurality of slats are defined between said first and third teeth and separated by the second or central tooth into two groups.

4. The cutting apparatus of claim 3, wherein said second or central tooth may be optionally formed at least one more.

10 5. The cutting apparatus of claim 1, wherein said locating means comprises a locating damper extending trasversely over the side of said set of blades opposite to said supports at a distance from said set of blades adjustable as desired.

6. The cutting apparatus of claim 5, wherein said locating
15 damper is actuated to incline as soon as said predetermined ends of said bottom rail, said slats and said head rail are cut off.

7. The cutting apparatus of claim 5, wherein a scale is marked or attached beside said locating damper to indicate the length of said predetermined ends to be cut off.

20 8. The cutting apparatus of claim 1, wherein the location of said supports is adjustable.

9. The cutting apparatus of claim 1, wherein more than two of said supports can be disposed.

10 . The cutting apparatus of claim 3, wherein additional one or
25 more of said second or central tooth may be provided.

11. The cutting apparatus of claim 2, wherein said slat opening is divided into two or more holes by the partition(s).

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ABSTRACT

A novel cutting apparatus for venetian blind comprises a set of blades for cutting the bottom rail, a plurality of slats and the head rail respectively, a pair of identical comb like supports with at least three intermediate vertical teeth to separate the bottom rail, the slats themselves, and the head rail from each other, and locating means to limit the length of the venetian blind to be cut off.